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Electricity on the Farm

August 1928

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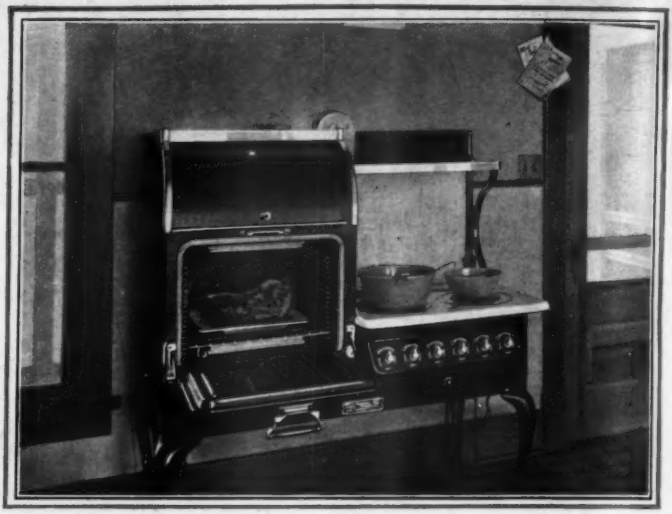

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Self-Oiling Water Systems
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362 Orange St. Ashland, Ohio

Manufacturers for more than fifty years of Myers Pumps for Every Purpose, Hay Tools and Door Hangers.

Electricity on the Farm

Vol. 1 AUGUST 1928 No. 14

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PAPEC

Ensilage Cutters and Hay Choppers For Electric Motor Power

PAPEC ENSILAGE CUTTERS have long been recognized as the easiest, smoothest, and most economical. The increasing use of electric motor power for farm machinery has found the Papec readily adaptable. The Papec is well known for its ability for non-clog elevation. Where easy running and low speed are required, the Papec stands first.

The common 5 to 7½ h. p. electric motor is sufficient to operate the next to largest or No. 127 size Papec. Mr. I. A. Schwinghamer, Albany, Minnesota, reports that he filled his 14 x 40′ silo in 14½ hrs. using the No. 127 Papec and 5 h. p. electric motor, at a cost of $2.61 for current for the entire silo.

HAY OR ROUGHAGE CHOPPING is becoming a general practice. Large feeders know that chopped roughage is economical and labor saving. The No. 127 Papec Hay Chopper meets the demand for a machine that can be operated with a small electric motor.

Write for printed matter on Papec Cutters or Hay Choppers. Also ask for our **Bulletin** on Single Phase Electric Motor Power for operating Papec Cutters

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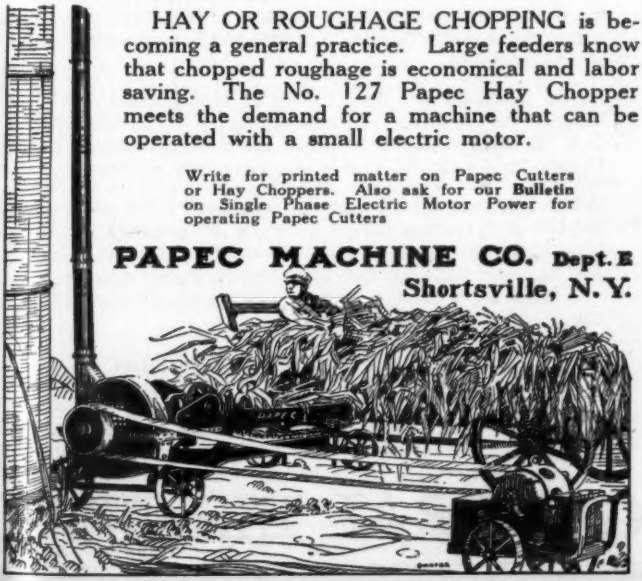


Cut Odd Jobs Short

ODD jobs! Not important in themselves, but jobs that someone ***has*** to do—and no one wants to. How we wish we could get rid of them! Even electricity can never quite do that. But it makes mighty short work of most odd jobs.

Saws, grindstones, feed grinders, and pumps are no longer implements of human drudgery on farms where G-E Motorized power is used. Electric equipment gets things done quickly, and is often entirely automatic.

When motors, control, lamps, and other equipment bearing the G-E monogram get to work on your farm, the time and annoyance of odd jobs will be cut short. There will be more time for the new things you want to do, and farm life will take on a new attraction for you and the younger generation.

Ask Your Power Company

If your farm is on or near an electric power line, ask the power company for a copy of the new G-E Farm Book which explains more than 100 uses for electricity on the farm.

GENERAL ELECTRIC

Electricity on the Farm

VOL. I AUGUST 1928 No. 14

Refrigeration and the Farmer

The American Society of Agricultural Engineers at their Annual Convention, held in Washington, D. C. recently, devoted considerable attention to the subject of electrical refrigeration and its place on the farm. Of particular interest were the comments of E. C. Easter, formerly professor of agricultural engineering at the University of Alabama. "Electrical refrigeration on the farm," said Mr. Easter, "makes farm life more comfortable, improves health conditions, eliminates the waste of many farm products and makes possible the profitable production of farm products that in many instances are not otherwise practical. This is especially true in the warm climate of the South. For example —according to unofficial estimates, approximately 50% of the meat killed on Alabama farms is either spoiled or damaged by sudden changes of the weather. This is not only an enormous loss, but also discourages the production of farm meat, even for home consumption. Too, the effort to increase diversified farming methods are retarded due to lack of a convenient form of refrigeration where the farmers are dependent upon ice from some town or city ice plant."

Judging from the comparatively slow adoption of electrical refrigeration on farms, there are many who are not yet acquainted with the real benefits to be obtained from electrical refrigeration. But it is significant, that there is no instance on record where electrical refrigeration, when once adopted on a farm, has ever been replaced by any other system of cooling.

Doubtless many farm folk are inclined to believe that electrical refrigeration is a luxury. This is, however, contrary to evidence. The cost of operating a refrigerator is in the majority of cases actually less than that of keeping an ice box supplied with ice—taking into account the value of labor employed in this work. Then there is the saving in food products resulting from the use of the electric refrigerator.

The electrical refrigerator is destined to be one of the most popular appliances made possible on the farm by the advent of electric service.

This outfit is cutting ensilage at the rate of 9½ tons per hour.

Silo Filling

TO insure complete success in using a 5 H. P. motor for silo filling:

1. Use a light running machine with a throat 13 to 15 inches wide.

2. Be sure the fan wings fit the housing closely—not more than ⅛ inch clearance at the ends.

3. Run the fan *slowly,* 375-450 R. P. M. This may require a 20 to 28 inch pulley on the cutter.

4. Keep the knives sharp—change them every half day.

5. Run the knives very close to the shear plate and be sure it, too, is sharp.

6. Feed the machine steadily and evenly.

7. Be sure your transformer and wiring are large enough. Ask your power company.

INDEXED

From Treadmill to Motor

Here's a Farm That has Used Power in Many Forms for Silo Filling

WHILE attending the New York State Fair last year, John Ham, a prosperous farmer operating a 300 acre dairy farm near Millbrook, N. Y., saw an exhibit of a 5 H.P. portable G. E. motor. Mr. Ham met there his friend Prof. Fairbanks of the Engineering Department of Cornell, and questioned him regarding the use of a motor for silo filling. Prof. Fairbanks explained the experimental work in progress at Cornell along this line and the results secured up to that time. The ultimate result was the purchase of a 5 H.P. motor by Mr. Ham.

The motor is now being used for several purposes, in addition to silo filling, notably, sawing wood, hoisting hay and grinding feed.

But this is getting at the story from the wrong end.

Old Farmers

The Ham family are not new at the business of tilling the soil and raising stock, for their farm dates back almost a century and a half. The silo problem has always been an important one to them and as far back as 1882 Mr. John Ham was one of the first farmers to construct a silo of wood which was of the double boarded square type. This silo was built within the barn.

The square style has given way to the cylindrical tubs now used. There are two silos built within the barn, one is 32 feet high with a capacity of 150 tons and the other is 38 feet high with a capacity of 100 tons. Mr. Ham has employed practically all forms of power for cutting and elevating silage. A horse treadmill operating an elevator type corn cutter was first employed. Then a coal fired steam engine, a kerosene fired steam engine and two gasoline engines followed in turn. The last gasoline engine, a 10 H.P. portable outfit gave way to the 5 H.P. electric outfit now used.

The Layout

The silage layout consists of the 5 H.P. motor belt-connected to a No. 13 Papec Corn Cutter which operates at a speed of about 515 R. P. M. with an average load of from 4 to 4.7 H.P.

As to the capacity of the outfit, during a one day check of cutting corn, two teams were hauling corn to cutter and during an eight-hour period of operation eight loads were delivered at an average of 2,500 pounds. This gives a rate of 25 tons for the day's operating.

Some Data on Electric Operation of Silage Cutters

And now regarding silage cutters in general, there has been developed considerable data by Prof. Fairbanks, to whom Mr. Ham first went for information on the subject, as well as by other capable agricultural engineers.

It appears that most ensilage cutters are run at speeds of 800 to 900 R. P. M. Tests made

(*Continued on page* 16)

Here Is the Convenient Grinding Outfit Suggested by Mr. Roehl. The Beveled Wheel for Sickle Grinding Can Be Taken Off Before Silage Knives Are Ground.

INDEXED

Grinding the Silage Cutter Knives

By E. R. MEACHAM

THE job of silo filling does not end for everyone when the crew goes home at night. Someone always has to go out and pedal an emery wheel or turn a grindstone to sharpen the silo-filler knives for the next day's run.

Putting a motor on this grinder saves a lot of man power at the busiest time of the year.

Mr. L. M. Roehl, an agricultural engineer at the New York College of Agriculture, has worked out a simple arrangement for this motorized grinding. He tells about it in detail in Cornell Extension Bulletin No. 155, *Grinding Farm Tools.*

If you are uncertain about the effect this rapid grinding may have on your tools, Mr. Roehl's experiments will reassure you.

"Experience with emery grinders run at the proper speed and used with care has proved that all edged tools that are used in farming can be successfully sharpened without damaging the quality of the tools and also at a great saving of time," says Mr. Roehl.

He mounts two grinding wheels on the same shaft with a pulley between and belts them to a motor, either ¼ or ⅓ horsepower, set up a foot and a half away. These can be fastened to a work bench in the farm shop, or bolted to a plank. The plank has one advantage if you think you may want to grind in different places; it is portable.

Mr. Roehl says that his experiments showed the smaller motor had power enough for everything but rapid grinding on the heavy jobs.

Speed of Grinder

The surface speed of the grinder should be from 4000 to 5000 feet a minute, according to Mr. Roehl, so a 6″ wheel must run from 2500 to 3100 R.P.M.

You can sharpen a silage knife on a grinder of this kind without any danger danger of burning the edge, if you will hold it on the wheel very lightly, and move it along on the grinder.

If the blade has knicks in the edge, you can grind them down first by holding the knife squarely against the grinder, and moving it slowly back and forth until the edge is even.

The cutting edge of a hollow-ground knife is so thin that it will not stand up under the service strain of silage cutting as well as a straight bevel edge will. To

keep this straight edge on the knife, rock the blade slightly as you move it along.

Of course it is not necessary to have a separate set-up for grinding to let electricity do the work for you. Any emery wheel can be belted to any motor you have.

George Stellmacher of Ripon, Wisconsin, motorized this grinding several seasons ago in a fashion of his own. He uses his tractor for custom work, and his silo-filling season is apt to last from three weeks to a month. That means many long hours over the grindstone.

He had in his shop an emery wheel 8″ in diameter and ⅞″ thick. He took this and fitted it with a rest along which the knives could be slid to give them a straight edge and uniform bevel.

Then he belted the wheel to a 5 horsepower motor already set up for feed grinding. The pulleys were arranged to give the wheel about the speed recommended by Mr. Roehl.

Keeping Knives Sharp

His silage cutter had two sets of knives; each set included three straight knives 19″ long on the cutting edge and ⅝″ thick. Since he used each set only half a day, all six of them had to be ground each night.

During the twenty days of actual silo-filling, he sharpened the equivalent of 120 knives. This took exactly 7¾ kw. hrs. of electric current. Mr. Stellmacher's farm was one of Wisconsin's experimental laboratories at that time, so a separate meter recorded all the current used for grinding. At his rate, and on the second step which all of these extra jobs fall into, the cost of pedalling that grinder was 23.1c.

Saves Time

"I never actually checked the time I saved doing it by motor instead of with foot power," he says. "But I know I get through the job lots quicker than I used to, and it is sure a relief not to have to pump away at that grinder after handling silage corn all day."

The Motor Is Set Up to Drive the Grinder and Other Shop Tools.

Mistress—And did you have a honeymoon?

Mandy (hesitatingly) — W-e-l-l. Rastus done helped me wid de washin's de fust two weeks.

What I Think of Electricity On The Farm

By MRS. AUBREY FELLOWS
Salisbury, Mo.

I WAS born and reared on a Missouri farm. With electricity the farm home is so different. Too much manual labor keeps the average farm woman from really enjoying her work. I have lived where we did not have electricity and its advantages, and know the difference it all makes.

MRS. AUBREY FELLOWS

Just a word to show you that our family is just an average farm family and the house in which we live is just an average farm house. Our family consists of Mr. Fellows and myself, two sons and a daughter, the daughter in school, my mother, eighty-five years old, and Mr. Fellows' mother are with us part of the time. The house is just a white frame one story house, having seven rooms and basement. It is not pretentious, inside or outside, but comfortable and modern. We moved to the farm when our children were small. We moved there and still live there from choice. We thought the farm would be the nicest place for the children to grow up. Our house was not modern when we moved there, but as soon as we could we began to make it so, and began to buy labor saving devices. We soon saw that a farm home could not be modernized without electricity. We had our choice of either buying one of the small automatic systems or in some way getting power from some town. We were partially instrumental several years ago in building nineteen or twenty miles of line serving farmers and two small villages. This line was afterwards sold to our present service company.

I have known parents to make the home modern and convenient after the children were grown and gone. We preferred to put in the conveniences while the children were at home and maybe they would stay longer. They are still with us. The older boy, after four years at Missouri University, is back and in partnership with his father in raising hogs and corn.

Cost of Electricity

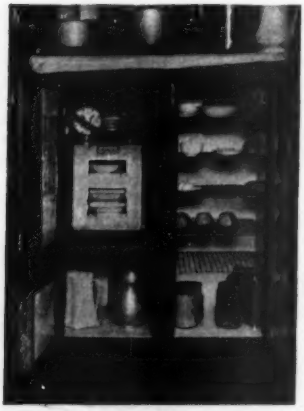
First, I want to say something about the cost of current. It must be within the reach of the farmer's bank account. A dollar looks big to most farmers and a bill for electricity once a month looks big because it takes real money to pay for it. Six years ago we looked

The Fellows Farm House

at electric stoves in St. Louis with the intention of buying; thought the stoves were all right, but the cost of current to operate one at that time prohibited our buying.

There are two classes of users of current; first, those who use just enough to stay within the minimum; that class is not helping itself much, and the power com-

pany less. The other class will use all the current it needs if it can be done economically. I believe we belong to the second class. I think our bill will average about $15 per month the year round. That may look big to farmers, but when you consider all we use current for and the work it does for us, I do not believe the cost is exhorbitant. By way of illustration, I will refer to Mr. Fellows' brother, who lives in Salisbury, Missouri. His monthly electric bill for city current for lights, iron, and sweeper, his ice bill, his laundry bill, and oil stove for cooking amounts to $12. He has a family of two while we have a family of six to seven. I will



Electric Refrigerator on Fellows Farm

enumerate the appliances we use at a cost of $15 per month: Lights in house, basement, poultry house and other outbuildings, pump, washing machine, iron, sweeper, fans in the mammoth incubator, stove, ice machine and battery charger.

Pumping the Water

When electric current is available the first thing that comes into the home is the lights. While they do away with some work and are a great convenience and satisfaction they do not come first in importance in the farm home.

We have our pumps in the basement. It pumps water out of the cisterns to the pressure tank that distributes it through the different pipes and sometimes when the wind does not turn the windmill we pump water into the stock tanks from the cisterns. It takes more water for a farm family. There are several reasons for this. There are more meals eaten at home, appetites are larger and a large percentage of what goes on the table is grown on the farm and requires more washing and preparation than that bought on the market.

It is hard to conceive of a one-fourth horse-power motor pumping one hundred gallons of water to a place we need it for seven-tenths of a cent, but that is just what it does. It has not been so long that I cannot remember since we carried water in buckets to and from the kitchen, had a wash tub in the middle of the kitchen floor for baths, and a wash bench for the men folks coming in from their work. Those days have been changed by a more efficient and convenient system. We have hot and cold water in a modern bath room, a shower bath in the basement, two lavatories on the far side of the kitchen for the men coming from outdoors. In the basement blue Mondays are no more. The one-fourth horsepower motor on our water system "carries the wash water" at a price far below any working man's consideration and with our washing machine operated by a one-fourth horsepower motor and a drain to "carry" the water away, I can do a washing for six or seven people which I could not begin to do on a washboard. I could have a hand washer, but I might have difficulty in hiring one of my boys to "turn the washer" at 1.2 cents an hour. That is what the electricity costs on this job.

Cooking With Electricity

Water is probably the most valued convenience in the farm home, but next in line of a time saver is the electric range. The range is used three times a day every day in the year and in canning seasons it is in operation much more. Again you can readily see

why the farm woman should be entitled to as good or better cooking equipment than the town woman. I have cooked with wood, with coal, with wood and coal, with gas both natural and artificial, with kerosene and with gasoline, but have found nothing quite as nice as electricity. It might not be quite as quick as gas, but it is so much cleaner, and I feel safer with it than with gas. Clean, efficient heat at the turn of a switch is much better than starting fires, carrying wood, coal and ashes, and standing over a hot range through the summer months when several hundred quarts of fruit and vegetables are canned as well as regular cooking. Through the winter months our electricity for cooking averaged 253 kilowatt hours a month. Current may cost a little more than some other fuels, but the time saved more than offsets the extra cost; besides it is a great pleasure to use it. I feel I know pretty well after having experience of using different kinds of fuels. I wish it were possible for every farm woman to have an electric range and be able to buy electric service at a reasonable cost. I sometimes think our total energy consumption is rather high. It is in comparison with other homes not using ranges. However, the cost for current may not be so much higher than for wood as a farmer seldom knows just what it costs him to chop and haul, saw and split his wood, and feed his horses and farm hands and carry the wood into the house and carry the ashes out.

Electric Refrigeration

One of the greatest difficulties on the farm is to know how to cook just the amount that is needed with little or no waste. That is the question a farm woman has before her every day during the warm months. For years we hauled the ice out from town in one hundred pound cakes as we have never put up ice ourselves. It is quite a chore to haul the ice and get it into the refrigerator. Some think it is cheaper to put up ice. It may be and it may not be

Here's Where the Washing is Done

if all the cost of cutting and hauling the ice and maintaining the ice house were considered. We have put an ice machine in our refrigerator, and the cost of electricity to operate it the entire year is considerably less than our ice bill was formerly during the summer months only. Then we do not have to worr about keeping ice in the refrigerator and no water and tracks to clean up after ice is brought in. We keep the unit in a cool pantry and do not disconnect it in the wintertime, a practice which might seem extravagant at first, but after all it is convenient and economical. No running out of doors in the cold, no freezing of foods, and a better system of the kitchen work. Through the winter months our refrigerator has been using an average of 24 kilowatt hours a month. Through the summer it will use between 50 and 75 kilowatt hours a month.

Time for Other Things

The farm woman is a busy woman, but with electricity she has

"I have found nothing as nice as electricity for cooking"

time for leisure or for a greater amount of productive work. I use my extra time for poultry. My young son and I are partners in the poultry business. We have had a certified flock of S. C. White Leghorns for six years, and have built this flock up to one of which we are very proud. We breed for production. Besides this flock we have recently put in a mammoth incubator for a small hatchery. I have kept exact records of cost on our poultry business for nine years and can tell you exactly the profits we have made and I want to tell you that you could take the total amount of all our electric bills multiplied several times from these profits and still have considerable money left, in addition to all the conveniences and pleasures. This is what I mean when I refer to the economical use of electricity on the farm.

Treadmill to Motor

(*Continued on page* 10)

have shown the cutters to be much less efficient at this speed than when operated at 350 to 550 R. P. M. Using a cutter operated at this lower speed by a 5 H. P. motor, silos may be satisfactorily filled by a crew as small as two men. These men bring in the load, start the motor and blow the corn into the silo. The labor problem is almost entirely eliminated. The power cost is low. The connected load is reasonably small.

Further test have demonstrated that it is not necessary to tamp the silage when the silo is filled slowly. The weight of the silage itself is so much greater than that of several men that it settles of its own accord. Because of this settling, more corn can be put into the silo, and when it is once filled, it will remain nearly full, the settling having taken place. This method has another advantage in that the corn may be cut as the silo is filled and it gets into the silo in better condition. Under a test in Michigan, two men filled a 10 x 37 foot silo in 18 hours (7½ hours actual running time).

The Rain Maker

By J. E. Waggoner

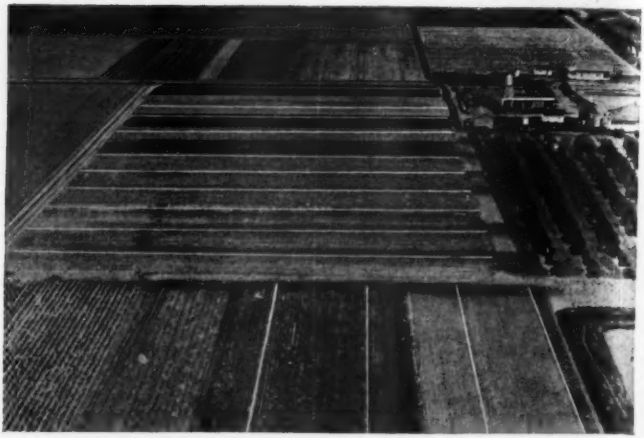
Irrigating Beans with Artificial "Rain."

RAIN making is not exactly a new departure. The pictures show an installation near McAllen, Texas, which was made about three years ago and so has been in use long enough to prove its advantages for certain kinds of crops.

Such a system costs from $100 to $125 an acre. This price includes the centrifugal pump and a 15 H. P. motor. The pump and motor have capacity and power enough to irrigate five acres at one time, that is, there will be sufficient pressure to thoroughly cover the entire space between the pipe lines which are placed 50 feet apart. The lines are 400 feet long with a nozzle spacing of two feet. One motor unit can be used to advantage to irrigate two or three 5-acre areas if the proper rotation of crops is used, or the planting dates are far enough apart so that only one area would require the water service during the hot period of the day, which is the case with small cabbage, tomatoes, peppers and other plants, to prevent burning. The period of danger from burning lasts only a few days and that only during certain seasons of the year.

The overhead rain making has many advantages. It distributes the water equally uniformly and lightly like rain. The amount of water is easily

Here's the Water Motor That Oscillates (rocks) the Spray Pipes.



Aeroplane View Showing Layout of "Rain Making" Pipes.

regulated and there is no excuse for applying too much. Water can be applied with a lot less work than by flooding and there is no loss of berries in the case of strawberries. When strawberries are flooded the nearly ripe berries are soon spoiled by lying in the water. Usually the berries are lost for two or three days.

Protect Against Light Frosts

The farmers who have overhead irrigation systems have found them a protection against light frosts. In the case of heavy freezes the system of course would not be of much value.

A decided effect is noticed on the rapidity of growth of plants. Such plants as cabbage, tomatoes, onions, etc., make as much growth in four weeks with over head irrigation as normally in six weeks.

Where the soil is subject to packing, the overhead irrigation seems to cause less packing of the soil than other systems of irrigation. The operation costs vary somewhat but the owners seem to think that in comparison with other methods there was practically a "stand-off." The equivalent of the savings in water, time and labor, etc., are used up in power. Even at that, the overhead irrigation owners are pleased with results and are enlarging their areas under overhead irrigation. The electric rain maker enables them to "turn on the rain" whenever it is wanted.

The Vacuum Failure

"This cleaner was brand new a month ago, and now it just won't work," complained the woman to the repair man.

The mechanic tested the vacuum cleaner thoroughly. The motor hummed and the suction was perfect.

"There's nothing the matter with it," he declared.

"There is," insisted the woman. "Look, it won't get an ounce of dirt out of this carpet now, but when we first used it there was almost a pound!"

A Guide to Good Farm Lighting

INDEXED

By W. C. BROWN and M. S. MEAKER

Engineering Department, National Lamp Works of General Electric Company

FARMERS everywhere have always enjoyed one advantage not granted to many other types of workers—they do the major part of their work outdoors in the best of light. But the very fact that the farmer takes advantage of every hour of sunlight for work in the fields means that many chores are still to be done after daylight fails, before his working day is ended.

In striking contrast to his work in the fields, the farmer's evening tasks have always been performed under the most miserable of lighting. The kerosene lantern has been a poor companion to light the way for the milking, separating, foddering, and other nightly jobs; and tired from his outdoor work the farmer has finished the day in finding his way around the familiar buildings by lantern light and by instinct.

Advent of Better Lights

Our country has been a leader in methods of cultivating the soil and growing and harvesting the crops. The modern tractor of our farms does more work than a dozen ox-teams of foreign lands; the efficient reaper takes the place of the hand scythe; the combine performs a host of tasks. But until the coming of electricity the farmers in the United States were just as handicapped as the peasants of Europe by darkness, which falls alike in every land. The old order of things is rapidly changing, however, and the wiring of the farm for electricity is the final link in the chain of events which mean a new freedom for the farmer and his family.

Generally the first use to which electricity is put is that of lighting; yet because of habits resulting from years of use of the older illuminants, the new lighting medium has rarely been utilized to the best advantage.

The aim of this series of articles is to explain the principles of good lighting as applied to the farm problem, and to give in simple terms the recipes by which the farmer can use electric light in the most efficient and valuable way.

Sufficient Light

The first consideration in the use of artificial light of any kind is to have enough light. To anyone who has been accustomed to carrying a lantern around the barns at night, even poor electric lighting is a blessing. But with electricity available to the modern farm, surely it is "penny wise" to pass up the opportunity to have the most suitable lighting that it will afford. By means of a sufficient number of properly placed outlets and switches, light may be turned on ahead of the user in the places where it is needed, and the convenience, comfort and safety of good light may be enjoyed.

Freedom from Glare

Although natural daylight is the most pleasing of any light, yet to look directly at the sun is very harmful to the eyes, as well as painful—and consequently we do not do it. On the other hand, artificial lighting sources must necessarily be located within the field of view, so we cannot help looking toward them, if not directly at them. Therefore they should be equipped with shades of some sort as a means of protecting the eyes

Fig. 1. Here a Bare Lamp Means Glare and a Poorly Lighted Work Bench.

from the glare. Glare is more pronounced with lamps of higher wattage, but even with the small lamps it is troublesome. Lamps of 25 to 100 watts inclusive have the new inside frosting which reduces the brightness materially, but even with these inside-frosted lamps some form of reflector or shade is ordinarily recommended.

Economical Use of Light With Proper Reflectors

Reflectors not only reduce glare by shielding the lamps from direct vision, but they provide better and more efficient illumination by directing the light down where it is needed. A considerable portion of the light from an electric lamp goes out at the sides, and if the lamp were hung near the ceiling, with no reflector, this light would be largely wasted on the upper part of the walls of the room. And, of course, if a bare lamp is hung down low, the bright light source is brought into the direct range of vision, which actually makes it hard to see and results in harm to the eyes.

Fig. 1 is a picture taken especially to show how the light is distributed from a bare lamp. This verifies the fact that most of the light goes out at the sides and not much gets down to the work bench. It also shows something else of interest when we remember how much the eye is like a camera. You will notice that the intense light from the very cen-

Fig. 2. Here We See the Economy of Using Proper Reflecting Equipment. The Same Lamp Was Fitted With an RLM Reflector for This Picture.

ter of the light source has actually burned the coating from the sensitive camera film during the exposure, so that instead of registering as the brightest spot in the picture, it shows up black. From this it is easy to realize how harmful exposure to glare is to the delicate "camera" of the eye.

Fig. 2 shows the same lamp over the workbench fitted with the proper reflector. It plainly demonstrates the economy of using reflecting equipment. Instead of having wasted light on the wall, here we have real illumination on to the bench where it is needed. In this connection, light might be likened to the raw material (like wheat), and illumination to the finished product (the bread all sliced and buttered)!

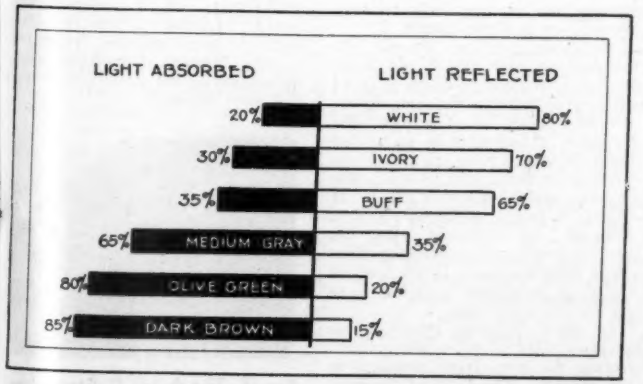
How Reflectors Serve

Reflectors, then, serve the dual purpose of shielding the eyes and directing the light wherever it is needed. There is a type of reflector for every purpose. Great concentrating reflectors are used in powerful searchlights for airport beacons; small ones are used to direct the light down onto the displays in show windows; and reflector and lamp manufacturers have agreed upon one standard type for ordinary work. This is called the Reflector and Lamp Manufacturers' Standard (abbreviated RLM) Dome Reflector, and one of these was used in Fig. 2. This reflector is very simple and durable, made of porcelain and enameled steel with the inside surface enameled in white. It is the best choice for lighting most of the farm buildings.

Paint and Illumination

Even with proper reflectors, the color of the walls and ceiling have a lot of influence on the illumination in a room. A considerable amount of the light we use is reflected once or twice at least, from the ceiling and from the upper side walls, before it reaches the place where we use it. And whenever light strikes a surface, only a part of the light is reflected and the rest is absorbed. This is why the amount of useful light in a room may be increased 50 to 100 per cent when dark ceilings and upper walls are refinished in a light color.

The accompanying chart shows the practical effect of different colors of paint on illumination. A light colored finish also assists in softening shadows, which means an improvement in the quality of il-



Light colored paint raises the illumination.

Fig. 3. For Safety—a Flood of Light Over the Driveway to the Barn.

lumination as well as an increase in quantity.

Yard Lighting

Yard lighting serves two purposes; first, it safely and conveniently lights the way between house and barn; second, it provides protection from night prowlers. When a commotion arises in the hen house at night, and the farmer takes a lantern and goes to investigate, he makes himself a target for a possible marauder. But when he can switch on several yard lights from the porch or even his bedroom, the prowler becomes the target and he is not likely to stay around—or to come back!

All yard lights should be mounted at least fifteen feet high, because if they were down in front of the eyes they would form uncomfortably bright spots against the darkness. They may be suspended from bracket arms mounted on poles or on the corner of the house or barn, and in this case the RLM Standard Dome Reflector with a 100-watt or 150-watt lamp is recommended. In some locations angle reflectors may be used effectively to floodlight an area from the side of a building.

In yard lighting the reflector serves a third purpose; that of protecting the lamp from exposure to the storms. The bulb of the gas-filled lamp becomes sufficiently hot when the lamp is burning that it may crack if exposed to rain. The RLM or angle reflector usually provides some protection, but sometimes not enough in bad weather. The permanent remedy is the use of a tight-fitting clear glass globe which fits over the lamp bulb. Such equipment is known as "vapor-proof."

To withstand severe weather conditions, yard lights should be fitted with weatherproof holders firmly attached to the reflectors. They may be wired so that a single switch on the porch or in the master's bedroom will turn on all the yard lights. It is sometimes desirable to install a few protective lights in truck gardens, vineyards, poultry houses or packing sheds, connected on the same circuit with the yard lights.

Fig. 4. The Angle Reflector Used on the Side of the Barn in Fig. 3.

Electrical Housekeeping

Conducted by VERA B. MEACHAM

Keeping FREE AIR in Circulation

THERE is plenty of fresh air out in the country but it isn't always available. Farm kitchens can be just as stuffy during canning season and on days when cooking for threshers is underway as any cooped up kitchen in town.

Those are the times when we are willing to pay a little for "free air." That is why modern invention, which long ago carried it into factories and shops, supplies it in kitchens, too, with simple ventilating fans.

I found one in my cousin's kitchen when I went over to help her with silo fillers one muggy day last September.

I got there just before noon, and when I went into the kitchen the oven and every burner of her electric range was going. As I stopped near the stove I sniffed the odors of cabbage and turnips and the good brown smell of roasting meat.

"It's really cool in here," I exclaimed in surprise. "I didn't think there was a breath of air stirring, but the wind must have come up. It's even blowing all the smell of cooking out of doors."

Grace turned away from the stove.

"That would be all right if it were true," she said with a twinkle in her eye. "But do you think the wind comes in here, gathers up all these odors and then turns around and blows outdoors with them?"

I suppose I looked bewildered.

"Come here a minute."

She walked across to the window overlooking the orchard.

"I've had this fan put in since you were here. I pull the string this way and it's a blower. It sucks all the warm air loaded with cabbage and roast beef out of doors, —and fresh air comes in continually to take its place.

"I can make it work the other way, too. If I pull the string again, all out doors, new mown hay in June, or apple blossoms in apple blossom time, comes tumbling into my kitchen on a stiff little breeze."

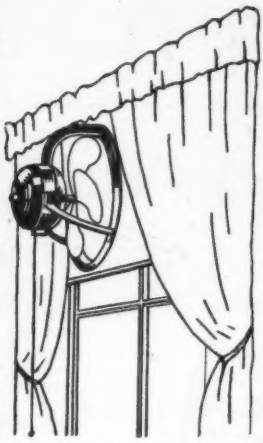
I pulled the chain first one way, then the other, to see how easily it worked.

"You know I have been cooking for twelve people all summer," Grace went on. "I haven't suffered from the heat at all. I used to bring our twelve inch fan out here while I was working. I moved it about and it did help a good deal by keeping the air in circulation, but when I saw this special ventilating fan at a Home Show, I decided that part of my money from the summer boarders

might just as well pay for keeping me comfortable while I was taking care of all of them."

"It looks like a good rig," I said examining it with interest. "And the window opens and shuts behind it without any difficulty, too."

"Yes, the window types are mounted like that," answered Grace. "Of course different fans are installed in different ways. They have been using them in factories and offices to increase the efficiency of the workers for a long time. But I ask you who on this whole round earth needs to be more efficient than a woman bringing up a family and feeding a parcel of city folks on vacation?"



"Nobody, I'm sure," I agreed. "And it can't cost you much for this fresh air."

"No, not much," said Grace. "Of course we haven't a meter on this fan, but I have seen some reports of the current used on fans in farm kitchens, tests where a separate meter had recorded all the current the fan used, you know. It took less than 10 kilowatt hours a month to run them. That's not entirely free air, to be sure, but cheap enough when winds won't blow and temperatures rise."

For Beating Jobs

IT does not take a tremendous amount of muscle to beat up a dozen eggs or mix a salad dressing, but since someone has invented motors that can do it just as well, I see no particular virtue in hanging on to the job.

These motors are sometimes designed just for one particular beater; sometimes they are built for other household jobs as well. On a beater they will whisk up the eggs, whip the cream, or mix the pancake batter in the twinkling of an eye.

I have a friend with a positive genius for making graham cracker cake. And she has always assured me that its infrequent appearances were due solely to the long, long beating it requires.

I took one of these motors over for her to try one day, and she was enthusiastic about it. It went through that beating in a hurry. In fact that is one thing to guard against when we are using a mechanical beater. It skips along so fast that we have to be careful not to over beat our eggs and cream.

The detachable motor can be belted to a tiny buffer to polish your silver, or set up on your sewing machine to do your pedaling for you.

"One thing to guard against when we are using the mechanical beater—it skips along so fast we have to be careful not to over-beat our eggs and cream."

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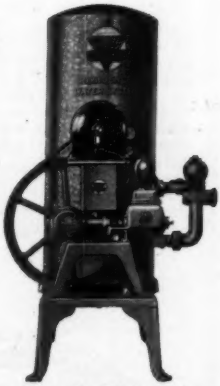

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Ice Box Cake

EVERY housewife keeps a weather eye out for new things to eat. The thrice-a-day demands of a family take constant planning, of course, but it is those extra occasions always bobbing up in sociable communities that put the greatest tax on our invention.

I got acquainted with a most delectable chocolate concoction at a luncheon the other day. Before I had a chance to pry the secrets of its excellence from my hostess, I encountered it again at a cooking school, with a twin in lemon this time.

It is called ice box cake.

If you are going to have a party this summer, perhaps you would like to try it. It makes a lovely dessert for a substantial luncheon, the kind you would serve for an all day club meeting, for instance. It is filling enough to round out the menu for a Sunday night supper, and supplemented with a cup of coffee, it is quite enough to give your guests at an afternoon affair.

These recipes are built around lady fingers, but they are just as satisfactory with slices of angel food, sponge or sunshine cake. You see it is as versatile in its structure as it is in its adaptability.

Lemon Ice Box Cake

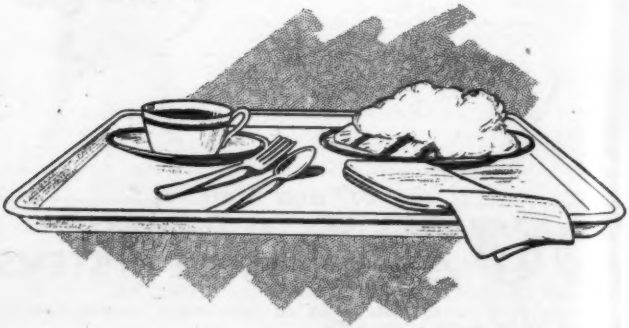
1 Cup Powdered Sugar
2 Tbsp. Butter
3 eggs
1 Lemon—grated rind and juice
2 doz. Lady Fingers
½ Tbsp. Knox Gelatine
¼ Cup Boiling Water

Cream sugar and butter. Add beaten egg yolks and cooled lemon juice in which the gelatine has been dissolved and to which ¼ cup boiling water has been added. Add lemon rind and fold in beaten egg whites. Line sides and bottom of pan with lady fingers. Add ½ filling, then lady fingers, then rest of filling and another layer of lady fingers. Serve with whipped cream. Serves eight.

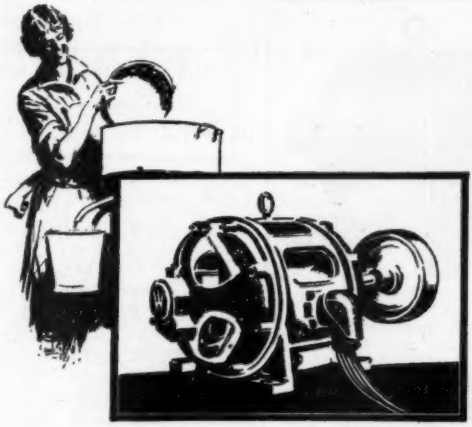
Chocolate Ice Box Cake

½ lb. Sweet Chocolate
3 Tablespoons Sugar
3 Tablespoons Water
1 Cup Whipping Cream
4 eggs
1 teaspoon vanilla
30 Lady Fingers

Melt chocolate in double boiler. Add sugar, water and well beaten egg yolks. Cook slowly until thick and smooth, stirring constantly. When cool fold in stiffly beaten egg whites and vanilla. Line sides and bottom of pan with lady fingers. Add chocolate filling then lady fingers. Set in refrigerator at least 12 hours. Top with whipped cream. Serves eight.



Time to Eat



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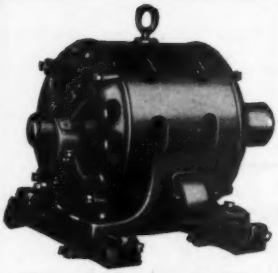

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(a new version of an old proverb).
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AND these also deserve special commendation:

"In Enlightened Homes are Light Hearts and Lighter Tasks," Mrs. Edw. E. Ragner, R. F. D. 1, Stone Ridge, N. Y.; "A Few Cents a Day Keeps the Dirt Away," Leo J. Winkler, Route 2, Jefferson, Wis.; "Makes Work Like Play on Cleaning Day, Mrs. Chas. Merrill, Box 18, Kaneville, Ill.; "Electric Aids, Happy Maids," Mrs. L. L. Mounce, Upway Farms, South Woodstock, Vt.; "Work Is But Play When Voltage Holds Sway," Mary Hutchinson, Arlington, Wis.; "All Work Is Like Play When Electricity Holds Sway," Mrs. H. J. Reed, R. D. 2, Romulus, N. Y.; "Electric Servants Work Like Charms, and Bring Contentment on the Farms," Margaret S. French, W. Passaic Ave., Bloomfield, N. J.; "Mother with Daughter Has Time to Play, Electricity Has Taken the Drudgery Away," Mrs. Ed. Nichols, Box 173, Monticello, Ark.; "The Elegance of Dreams for the Purse of Moderate Means," Verna Wasman, R. F. D. 1, Downs, Ill.

"How dear to my heart are the tasks of my childhood,
When done by the easy electrified way;
No fussing and scolding, and naught but a mild word,
For work is as pleasant and jolly as play."

Mrs. Annabel Parks,
Cedar Hill, Tex.

"Use the switch and spare the child"

What is Your Title for the Cover?

ELECTRICITY ON THE FARM offers a $25.00 cash prize for the best title for the picture shown on the cover of this issue (August).

RULES OF CONTEST

1. Contest closes September 5.

2. Contestant must be a farmer or a member of his family *living on the farm.*

3. More than one title may be submitted.

4. In case of a tie, each winning contestant will receive $25.00.

5. Print plainly your name and address, and send your suggestion to Title Editor, ELECTRICITY ON THE FARM, 225 West 34th Street, New York, N. Y.

6. The winner for August will be announced in ELECTRICITY ON THE FARM for October.

The Editor will be pleased to receive from any readers submitting titles a brief outline of the use made of electric current on their farms.

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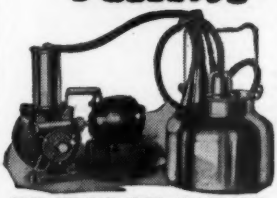

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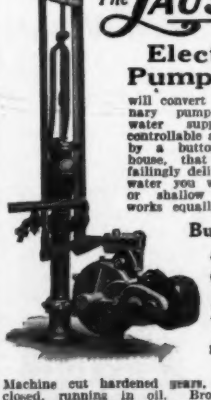

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Electric Barn Ventilation and its effect on milk yield is fully explained in a folder published by the Ilg Electric Ventilating Co., 2850 No. Crawford Ave., Chicago, Ill.

Fresh Water, Its Value on the Farm and how it can be easily obtained, is explained in a bulletin which you can get from the National Utilities Corp., Bellevue Place, Milwaukee, Wis.

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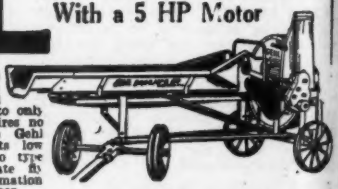

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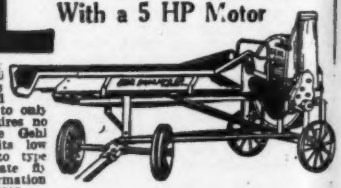

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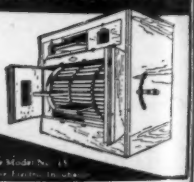

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